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NOTES FOR STUDENTS

Taxonomic notes.—BURT[2] has described a new species of *Pistillaria* (*P. Thaxteri*) which he records as the smallest known hymenomycete. It was collected in Connecticut, and is so minute that the "fructifications are not visible to the naked eye unless rendered so by special illumination and background." The fructifications were observed scattered on the surface of very rotten wood, "merely gregarious, not united into clusters," and as many as 115 were counted on an area 2×0.5 cm. The fungus is remarkable not only as the smallest known "toadstool," but also for its extreme simplicity of structure.

FERNALD[3] has described a new species of *Juncus* (*J. pervetus*) from Cape Cod, resembling *J. Roemerianus* in many particulars. It is stated that this new species "is one of the many remarkable species of world-wide affinities which are being discovered so frequently on the coastal area of southern New England and southeastern British America."

GATES[4] has had occasion to investigate *Trillium* in connection with his work in genetics, and has been impressed with the great variability of the genus in certain organs. In attempting to delimit the species, he recognizes 31 species with 9 varieties. *T. venosum* is described as a new species from Idaho, and new varieties are described in *T. luteum*, *T. lanceolatum*, *T. grandiflorum*, and *T. ovatum.* The published records of variation in the genus are brought together, and their number is remarkable. The author suggests that the genus *Paris* has been derived from the *T. erectum* group, and that *Medeola* has also come from *Trillium.*

GREENMAN,[5] in continuing his studies of *Senecio*, has presented § LOBATI, comprising 16 species, 4 of which are described as new.

HOWE and HOYT,[6] in studying a small collection of algae obtained through dredging operations on August 11, 1914, in water on a reef about 23 miles off shore from Beaufort, discovered 7 new species belonging to the following genera: *Microchaete*, *Derbesia*, *Phaestroma*, *Erythrocladia* (2), *Acrochaetium* (2). The collection also contained 2 species previously known from Europe only, namely, *Streblonema solitarium* and *Elachristea stellulata.*

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[2] BURT, E. A., *Pistillaria* (subg. *Pistillina*) *Thaxteri* Burt, n.sp. Ann. Mo. Bot. Gard. **3**:403–406. 1916.

[3] FERNALD, M. L., A new *Juncus* from Cape Cod. Rhodora **19**:17–20. 1917.

[4] GATES, R. R., A systematic study of the North American genus *Trillium*, its variability, and its relation to *Paris* and *Medeola.* Ann. Mo. Bot. Gard. **4**:43–92. *pls. 6–8.* 1917.

[5] GREENMAN, J. M., Monograph of the North and Central American species of the genus *Senecio.* Part II. Ann. Mo. Bot. Gard. **4**:15–36. *pl. 4.* 1917.

[6] HOWE, M. A., and HOYT, W. D., Notes on some marine algae from the vicinity of Beaufort, North Carolina. Mem. N.Y. Bot. Gard. **6**:105–123. *pls. 11–15.* 1916.

MACKENZIE,[7] in continuation of his studies of *Carex*, has presented the "Californian representatives of the OVALES." The list includes 25 species, 15 of which are described as new.

ROBINSON[8] has published a detailed monograph of the American genus *Brickellia*. The need of it, the author remarks, "presents no unusual condition among the larger genera of the Compositae." The 91 species, 11 of which are new, are grouped in 9 sections. The systematic presentation is preceded by a full discussion of the diagnostic value of the characters used.

RYDBERG,[9] in continuation of his studies of the Rosaceae, has investigated the species of *Rosa* occurring in California and Nevada. He recognizes 34 species, 12 of which are described as new.

TIDESTROM[10] has described a new *Allium* (*A. platyphyllum*) from the Wallowa National Forest of Oregon.—J. M. C.

Effect of carbon dioxide on respiration.—KIDD[11] has studied the effect of various concentrations of carbon dioxide on the rate of anaerobic and aerobic respiration of seeds of peas with testas both intact and removed. The work is marked by brilliancy of design, and in the main of execution. In concentrations of CO_2 ranging from 0 to 50 per cent, the depressing effect on anaerobic respiration is proportional to the square root of the concentration. As the concentration rises above 50 per cent, the depressing effect falls more and more behind the square root of the concentration. Carbon dioxide also depresses aerobic respiration when measured either by oxygen consumption or CO_2 production. In the latter case the concentration effect is similar to that in anaerobic respiration. When oxygen is deficient, CO_2 has no depressing effect upon the oxidation phase. It is assumed that the primary anaerobic phase is then progressing fast enough not to limit the secondary aerobic phase of respiration, and that it is only the anaerobic phase that CO_2 depresses. Only the so-called floating respiration of BLACKMAN (respiration of storage carbohydrates, fats, and proteins) and not protoplasmic respiration (respiration still occurring in starving tissue) is thus depressed. The work throws considerable light upon the mechanism of respiration.

In work of this sort one should be sure that the cultures are sterile and that the anaerobic CO_2 production is that of the seeds and not of organisms growing

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[7] MACKENZIE, K. K., Notes on *Carex*. XI. Bull. Torr. Bot. Club **43**:601–620. 1916.

[8] ROBINSON, B. L., A monograph of the genus *Brickellia*. Memoirs Gray Herb. I. pp. 151. *figs. 95*. 1917.

[9] RYDBERG, PER AXEL, Notes on Rosaceae. XI. Bull. Torr. Bot. Club **44**:65–84. 1917.

[10] TIDESTROM, IVAR, *Allium platyphyllum*, sp. nov. Torreya **16**:242. 1916.

[11] KIDD, FRANKLIN, The controlling influence of carbon dioxide. Part III. The retarding effect of carbon dioxide on respiration. Proc. Roy. Soc. B **89**:136–156. 1916.